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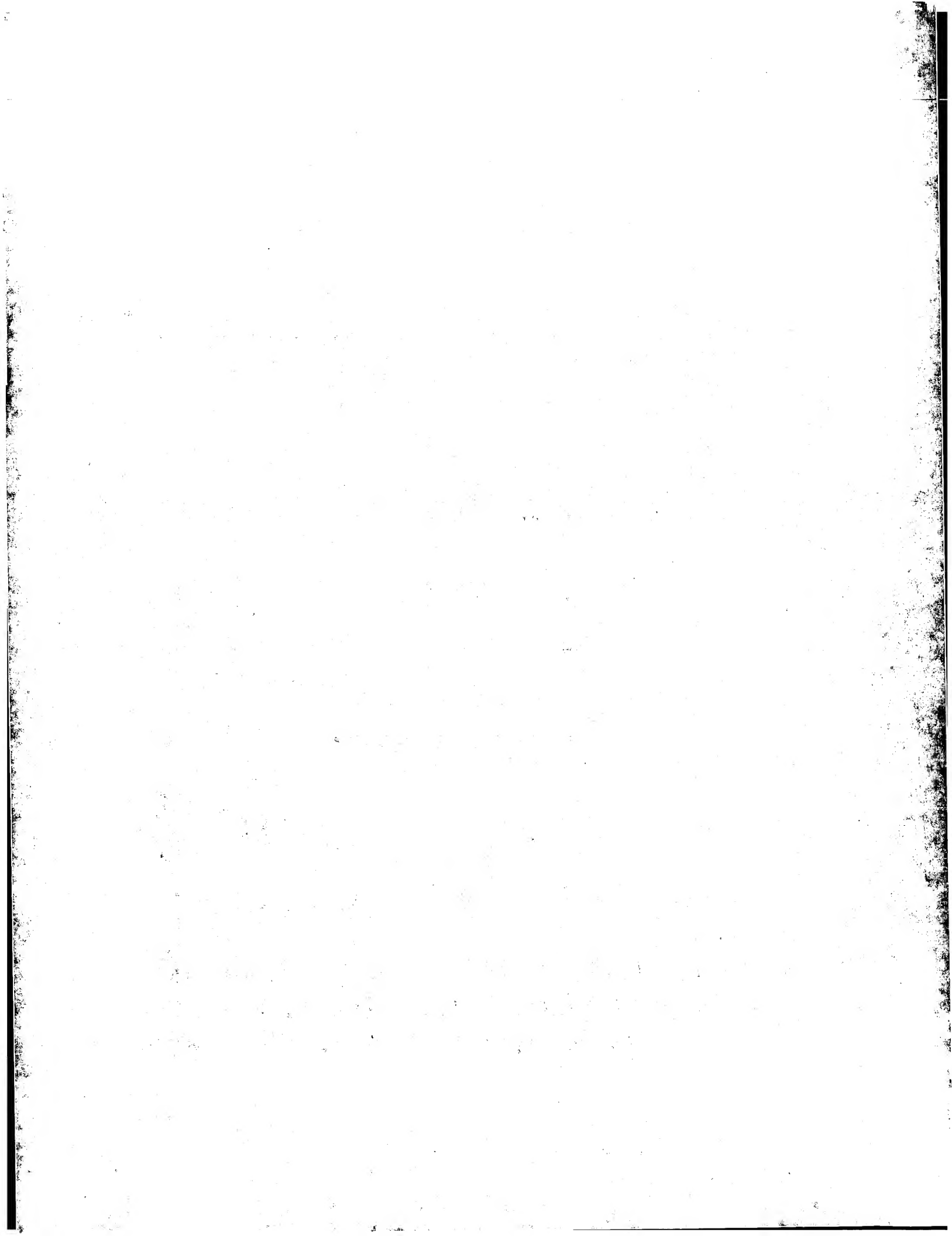
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## PATENT SPECIFICATION



Convention Date (Germany) : Nov. 28, 1936.

486,367

Application Date (In United Kingdom) : July 9, 1937.

No. 19110/37.

Complete Specification Accepted : June 2, 1938.

## COMPLETE SPECIFICATION

## Improvements in Closures for Boxes, Tins, Drums and like Containers

I, ALFRED BOENECKE, of Nurnberger Strasse 53/55, Berlin, Germany, of German Nationality, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to closures for boxes, tins, drums, and like containers formed with one open end to be closed by a cover or bottom which can be pressed-on tightly and is characterised in that both the container and the cover or bottom are each made in one piece and that a plurality of locking lugs made of a non-metallic material, such as artificial resin, and with a certain amount of resiliency so that they will give slightly, are symmetrically disposed either at the open end of the container or on the cover or bottom, corresponding clearance apertures for the locking lugs and abutments therefor being provided in the cover or bottom, if the lugs are on the container, or in the wall of the container if the lugs are formed on the cover or bottom.

The container is thereby reliably closed without the assistance of separate parts. The construction may be such that opening the container necessitates breaking the locking lugs and/or their abutments, so that the container can not be closed again once the cover or bottom has been removed. In this way re-use of the parts of the container is prevented and also unauthorised interference with the contents of the container. When the part forming the abutment for the locking lugs is also made of a non-metallic material, the invention solves the problem of providing with the simplest means a container of exclusively home raw materials, the constituent parts of which can be made ready for use in one working operation. This problem is perfectly solved by pressing both the container and the cover or bottom from artificial resin.

If at the same time it is arranged that the locking lugs project outwardly there will be obtained the additional advantage of simple press moulds.

The invention is also concerned with the steps to be taken to ensure that it

should be possible to remove the whole or part of the contents of the container, without having to sever the firm connection of the parts joined together when it was closed. For this purpose a part of the wall which is perceptibly reduced in thickness and thus recognisable from the outside is provided in the container or in the cover or bottom. This effect can be simply and perfectly produced when the container and the cover or bottom are pressed from artificial resin materials. For example a circular surface, or several circular surfaces, can be made sufficiently thin, so that one or more recesses are produced at which the parts in question can be easily punched through. If it is necessary or desirable to prevent particles from getting into the interior of the container, then according to the invention the zone of perceptibly reduced thickness is an annular strip covered by the edge of a boss. In the case of bottle-shaped containers with a pressed-on bottom, it is particularly advantageous to form the weakened part as an annular strip at the edge of a false top mounted in the neck of the container.

The accompanying drawings show by way of example several constructions according to the invention;

Figure 1 is a partial section through a container with four outwardly projecting locking lugs.

Figure 2 a central section through a cover for the container shown in Figure 1.

Figure 3 a partial section of the container with the cover applied thereto and Figure 4 a plan view of the same.

Figure 5 a central section through a container with two recesses in an outer ring and with a pressed-on cover with two outwardly projecting locking lugs.

Figure 6 a side elevation of the closed container according to Figure 5 and Figure 7 a plan view of the same.

Figure 8 is a partial section through the container and cover according to Figure 5, on an enlarged scale, before assemblage.

Figure 9 a partial section through the container according to Figure 1, with a pressed-on cover which is of dished

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formation with a sunk surface of a perceptibly reduced thickness.

Figure 10 a partial plan of the closed container according to Figure 9.

5 Figure 11 a central section through a cover with a central boss, the edge of which covers a weakened annular strip and

Figure 12 a partial section through a 10 bottle-shaped container with a false top mounted in the neck, the edge of which forms an annular weakened strip.

At the upper open end of the container 14 of Figure 1 are symmetrically arranged 15 four outwardly projecting locking lugs 16 (Figures 1 and 4).

The cover 15 shown in Figure 2 is adapted to be pressed on the said container and has four apertures 18 to clear 20 the locking lugs 16, and adjacent to the same at 19 provides abutments for the lower surfaces 17 of the locking lugs 16 as clearly shown in Figure 3. A strengthening flange projecting upwardly 25 from the cover 15 is cut away at 20 to correspond with the locking lugs 16 allowing for their natural resiliency. A packing ring 21 is arranged between the 30 shoulder at the mouth of the container 14 and an annular rib of the cover 15. Under the abutments, the cover 15 is preferably made slightly conical (Figure 3) in order to facilitate its application to the container 14.

35 The closure of the container in the construction according to Figures 5 to 8, while the same in principle, as that of Figures 1 to 4 differs therefrom in the relative position of the locking lugs and the clearance apertures and abutments, 40 and in addition the packing ring 21 is situated in an annular groove in the cover 15. Two outwardly projecting locking lugs 23 formed on the depending flange 45 22 of the cover 15 pass through or into the apertures 24 in the wall of the container 14 which provides abutments for the locking lugs 23 in an outer ring 25.

50 The cover 15 closing the container 14 according to Figures 9 and 10 shows a circular recess, under the edge 26 of which, on the under side of the cover is arranged an annular vee-shaped groove 27. Thus a circular portion 28 weakened 55 by the reduction in thickness at its edge, is produced which can be driven in by a light blow, without producing splinters. If there is no objection to splinters, the vee-shaped annular groove 27 may be 60 omitted. In either case, particles of the cover normally get into the interior of the container. To avoid this, with certainty the arrangement according to Figures 11 and 12 may be used.

65 In the construction according to

Figure 11, the cover 15 is provided in the centre of its lower surface with a recess 29 above which is a boss 30, the edge of which covers an annular strip of a perceptibly reduced thickness whereby a 70 weakened connection is formed at 31. By a slight lateral blow or by a twist, more particularly when the boss 30 is elongated or polygonal, the boss 30 can be easily removed. 75

The bottle-shaped container 140 according to Figure 12, may be closed by a bottom similar to the cover shown in Figure 2 or Figure 5. In the neck 32 is 80 mounted a false top 33 with a recess 34 and with a boss 35 closing it. At the edge of the false top 33 is formed an annular strip of perceptibly reduced thickness which may be made by 85 pressing-in a vee-shaped annular groove 36. It is thus possible to break the false top 33 off the neck 32 by giving a sudden jerk or tilt to the vessel. The cap 37 prevents the false top 33 from being 90 accidentally removed from the neck 32 and is used also for closing the container 140 when the false top 33 is removed.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to 95 be performed, I declare that what I claim is:—

1. Closure for boxes, tins, drums and the like containers formed with one open 100 end to be closed by a cover or bottom which can be tightly pressed-on characterised in that both the container and the cover or bottom are each made in one piece and that a plurality of locking lugs made of a non-metallic material, such as 105 artificial resin, and with a certain amount of resiliency so that they will give slightly, are symmetrically disposed either at the open end of the container or on the cover or bottom, corresponding 110 clearance apertures for the locking lugs and abutments therefor being provided in the cover or bottom, if the lugs are on the container, or in the wall of the container if the lugs are formed on the cover 115 or bottom.

2. Closure according to claim 1, characterised in that the locking lugs project outwardly.

3. Closure according to claim 1, characterised in that the locking lugs project 120 inwardly.

4. Closure according to claim 1, characterised in that the container or the cover or bottom comprises a part of perceptibly 125 reduced thickness recognisable from the outside.

5. Closure according to claim 4, characterised in that the part of perceptibly 130 reduced thickness is an annular strip

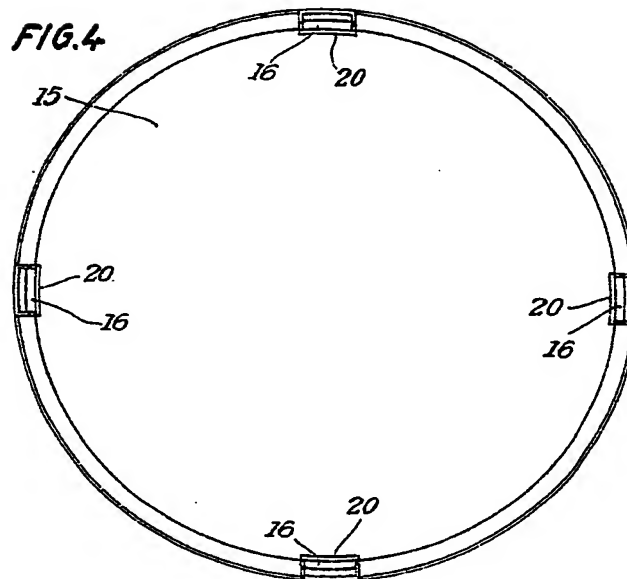
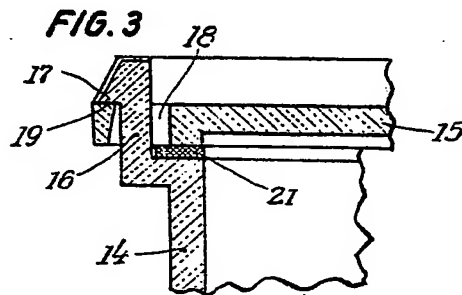
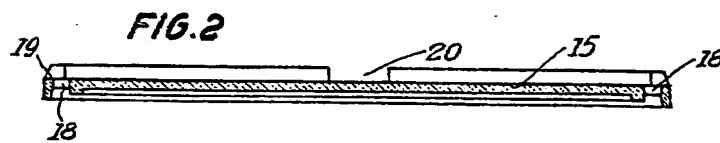
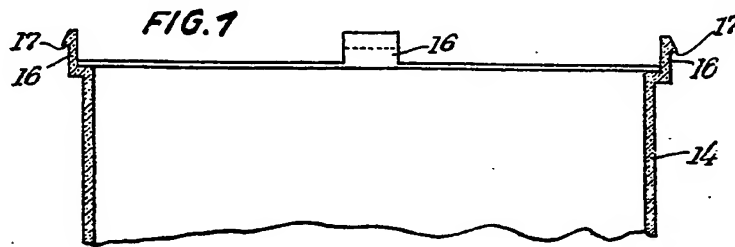
covered by the edge of a boss.

6. Closure according to claim 4, characterised in that the part of perceptibly reduced thickness is an annular strip  
5 formed at the edge of a false top mounted in the neck of the container.

Dated this 9th day of July, 1937.

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FIG. 1

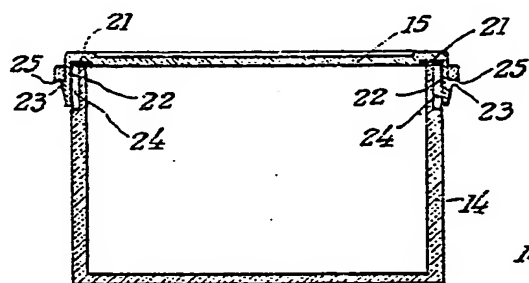


FIG. 5

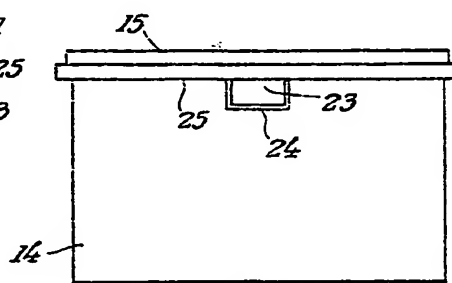


FIG. 6

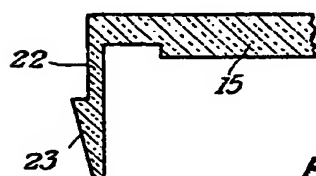


FIG. 8

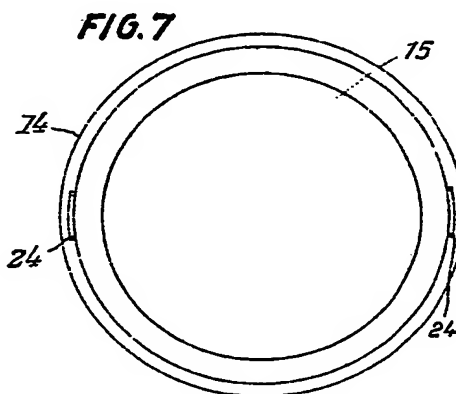
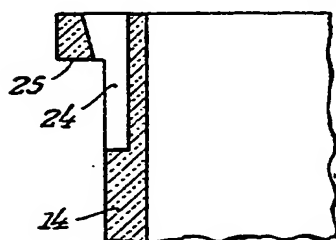
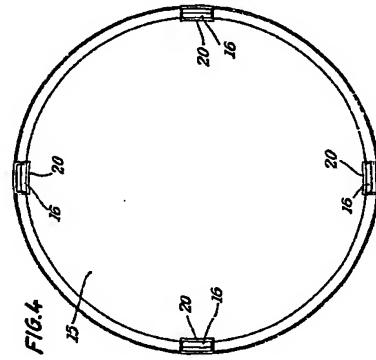
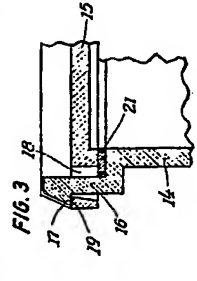
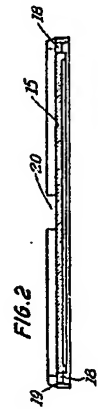
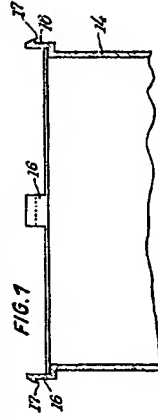
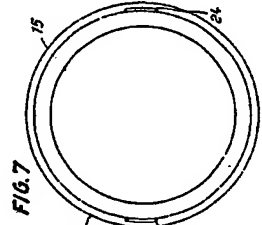
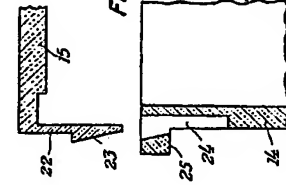
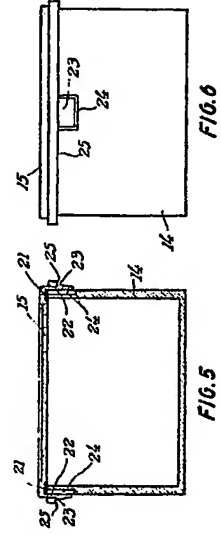


FIG. 7



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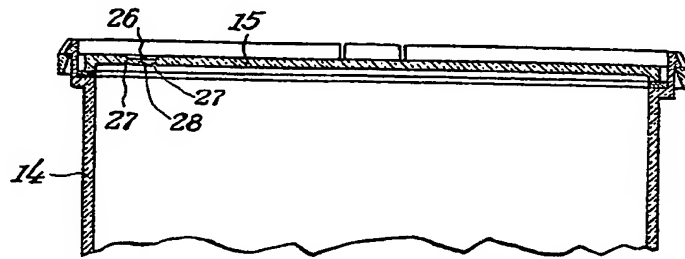


FIG. 9

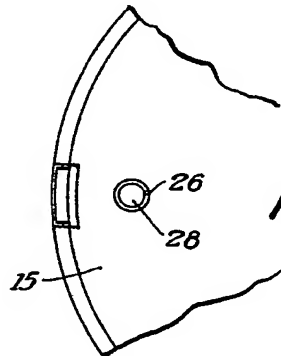


FIG. 10

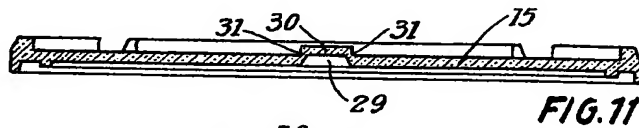


FIG. 11

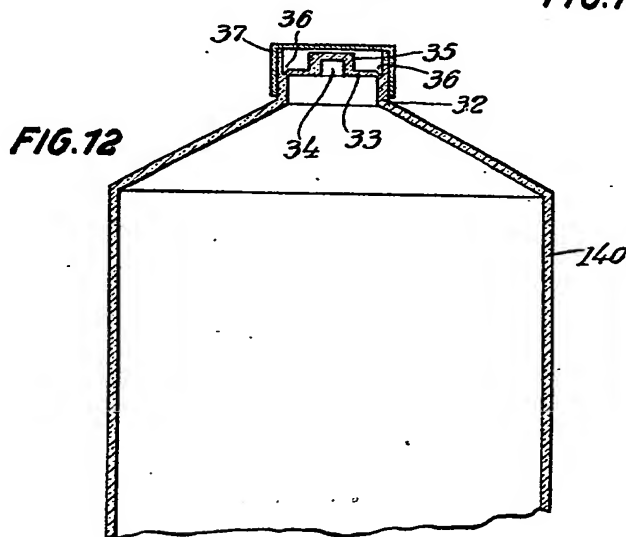


FIG. 12

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